[illegible] corrects this. With old geese the treatment is more effective if applied during the annual ~~moult~~ molt, which usually follows the breeding and hatching season. In any ~~instance~~ event, the only effect of the dropped wing is on appearance.

Should it be necessary for this or any other reason ~~the~~ to catch the geese, it is particularly important to avoid the instinctive (among poultry people) grab for the leg. Geese have relatively weak legs and relatively powerful wings. Hence, damage may be inflicted on ~~neither~~ either or both parties to the encounter. The proper and only safe way to catch a goose is by the neck. Unless unusual force is applied, there is no danger of choking them. They may also be carried this way. We ~~suggest~~ prefer, however, to carry the goose with its head tucked under our arm, holding both legs with the hand on that side. A wire, similar to and as stiff and strong as a chicken catching hook, makes a good hook for geese. A device similar to a sheppherd's hook can also be made by bending a green sapling in a form that can be made by heavy nails and a block of wood and allowing it to dry. The finished hook should be at least 6 to 8 feet long, longer if convenient, with the bent-back end that constitutes the hook being about 8 inches long. The open space is perhaps an inch and can be easily opened or closed as experience indicates. It is easier to keep the open end of the hook on the side toward the geese and to let the geese run into it. ~~This~~ This may sound complicated but it is really quite easy and ~~takes but~~ skill comes with a little practice. As soon as the goose approaches hooked, lift it up and bring it toward ~~the body~~ you. Grasp the neck by the free hand, press the goose against your body, his back to your thigh, remove the hook and hold him as above. If ~~he~~ the goose is to be examined, ~~one~~ it is a good precaution to hold both legs in one hand and a wing with the other, if the goose is not docile. If the geese are to be crated, they should be put into the crate and removed head first.

The hook is also a convenient device for driving the geese. Instinctively they go directly away from [illegible] [illegible]. Even a [illegible] of [illegible], equipped with two hooks, or two long branches or sticks, can drive a relatively large flock of geese by placing himself behind them and extending the stick or hook out to the side opposite [illegible] [illegible] [illegible] geese to go. A corner of a fence is a good place to gather than for catching, but if no fence is available, or no building against which they can be collected, four or five people encircling them will enable one skilled with the hook to catch even excited geese in the open. I have done this on an icy hillside among geese light enough to fly and unused to people and handling. Under normal circumstances, a fence low enough for a ~~[illegible]~~ man to [illegible] over it will confine geese, unless they are frightened or unusually light. If any show a disposition to fly, cutting the feathers off one wing tip will prevent this with no adverse effect on the geese. This has to be done annually, after the feathers grow out.

Fencing is not required to separate geese for breeding ~~purposes~~ once the matings are established. While this is less true of the Chinese than other species, philandering is rare. Each gander has his own family, for mating purposes, although the Chinese will raise any young, some of the ganders even joining the females in sheltering the young among ~~with the females~~. In practise this means that the matings should be established before the breeding season. Ordinarily, confining the young gander with the females with whom it is desired he mate is all that is required. This should be done as much before the breeding season as possible. Once the family relationship is established, it is permanent. There are some cases of wife-stealing, however, even if not too common. Add Wild [illegible] here, (see attached paper for insert)

When the breeding season approaches, the manner of the gander usually changes. He pays more attention to his mates and is reluctant for anything-not just any one- to go near his mates. This again is a case in which the Chinese are a little different, for several families of Chinese may stay almost as one ~~during the season~~ all the time. Another preparation for the breeding season is the making of nests which one then hopes the geese will use. They are quite independent, but usually, if they have sufficient time to investigate them and adjust to them, they will use large boxes or barrels bedded with straw, grass clippings or other soft materials.

add where indicated on page 7

There is often some fighting among ganders, especially when families are first establish or mixed for the first time, and during the mating and breeding season. Only rarely is any damage done, and with our Chinese the amount of fighting has been negligible in any event.

[illegible]

Nest on

[illegible] -to-incubation, especially if the ground is damp, whereas the eggs keep and hatch better in a moist environment. But nests too close together are not a good practice because if more than one goose uses a nest there is increased chance of egg breakage, greatly reduced hatchability if the eggs are sat upon, and more danger of newly-hatched goslings being accidentally trampled. If it is intended that the geese hatch the eggs, the ability of a weak, newly-hatched gosling to get back into the nest should be considered, because frequently, especially just after hatching, the goose returns to the nest with her young.

If the eggs are to go be incubated artificially, they should be gathered daily, more frequently in warm weather, and kept in a cool, moist place. They should be marked (we use a [illegible] heavy marking pencil) and use the date laid as an identification so the mark can identify the side of the egg that is up or down when the eggs are turned. Turning the eggs is advisable during the storage period. We also add the date the eggs were placed in the incubator at the same point. During incubation the eggs should be turned at three or preferably four regular daily intervals until the third day before hatching, unless incubator instructions indicate otherwise. Soiled eggs should be cleaned, by buffing w/ [illegible], but not wiped. If washed, the water should be slightly warmer than the egg. Our experience is that it is not possible to keep the humidity too high in the incubator. We spray the eggs with water the temperature of the incubator (from storage in it) each time we turn the eggs. The best incubator temperature is approximately the same as for chicken eggs, but just a trifle lower. In a still-air incubator, the water pan should be removed just before hatching to prevent the drowning of the just-hatched goslings, which are much weaker than other fowl at that time.

The normal incubation period is usually given as 28 days, but we have had eggs hatch already [illegible]. Instructions on handling and operating should be followed carefully. [illegible] should be handled [illegible] to newly-hatched goslings. They are an excellent [illegible] [illegible] approximately the same as [illegible]

Procedures

Instructions

RESEARCH CENTER

Generally, goose eggs do not hatch as well as others in incubators. It is not uncommon for a completely developed embryo to die instead of hatching. It is a little more common for the egg to pip (that is, for the gosling to begin to break out) and then nothing happens until the gosling ~~hatches~~ dies. With care and practice a good percentage of these can be saved by the following procedures we have worked out from our own experience. We use the heavy marking pencil to indicate the point at which the shell is pipped and indicate the time observed. If there has been no progress in 24 hours, we carefully break small pieces of the shell out opposite to the rotation of the gosling, or counter clockwise. Perhaps it should be explained that embryos have a hard, sharp tip on the upper mandible with which they chisel their appearance into the world with upward blows made by sharp motions of the entire head. This can be heard and sometimes seen. As they make this motion they also rotate in the shell. If the shell is broken in advance of the beak, there is nothing with which the gosling can effect its rotation, hence the shell must be removed behind the point where the beak is. This should be done slowly and carefully and discontinued at the first sight of blood, else the gosling will bleed to death. The membrane should also be kept trimmed and moist or it will dry to the embryo, also preventing rotation and causing death. This operation should be gradual and, again, it should be emphasized, careful.

Most of the eggs require no such unusual attention, but we believe it is a good practice to work out a simple code of marking the eggs during hatching so the progress of hatching is immediately ascertained, by a mere glance. Goose hatching in incubators is both a skill and an art in which nothing entirely replaces experience. It is best not to bother those eggs that appear to require no special attention. For the most part nature takes care of everything. But it is also necessary to try and save as many of the goslings that would ordinarily not hatch successfully since the unusual instructions above. We have also on occasion saved some [illegible] goslings by making an air-hole in the air-cell or blunted end of the egg. [illegible] [illegible] after all the air in the shell has been used up.